

WHAT WE CLAIM IS:

1. A block copolymerization polyimide composition, wherein a block copolymerization type polyimide obtained from a tetracarboxylic dianhydride and a diamine is
5 dissolved in at least one solvent selected from a ketone, an ether and an ester.

2. The block copolymerization polyimide composition according to claim 1, wherein the block copolymerization polyimide is obtained by heating a
10 tetracarboxylic dianhydride and a diamine in at least one solvent selected from a ketone, an ether and an ester and in the presence of a catalyst resulting from a lactone and a base.

3. The block copolymerization polyimide
15 composition according to claim 1 or 2, wherein the tetracarboxylic dianhydride is at least one selected from the group consisting of 3,3',4,4'-biphenyltetracarboxylic dianhydride, 3,3',4,4'-benzophenonetetracarboxylic dianhydride, 3,3',4,4'-biphenyl ether tetracarboxylic
20 dianhydride), 3,3',4,4'-diphenylsulfonetetracarboxylic dianhydride (DSDA), bicyclo(2,2,2)-oct-7-ene-2,3,5,6-tetracarboxylic dianhydride, 1,2,4,5-cyclohexanetetracarboxylic dianhydride, 2,2-bis(3,4-dicarboxyphenyl)hexafluoropropane dianhydride,
25 pyromellitic dianhydride, and 5-(2,5-dioxotetrahydrofuryl)-3-methyl-3-cyclohexene-1,2-dicarboxylic anhydride.

4. The block copolymerization polyimide

composition according to claim 1 or 2, wherein the diamine is at least one selected from the group consisting of siliconediamine, bis(3-aminopropyl)ether ethane, 3,3'-diamino-4,4'-dihydroxydiphenylsulfone, 4,4'-diamino-3,3'-dihydroxybiphenyl, 2,2-bis[4-(4-aminophenoxy)phenyl]hexafluoropropane, siloxanediamine, bis(3-aminopropyl)ether ethane, N,N-bis(3-aminopropyl)ether, 1,4-bis(3-aminopropyl)piperazine, isophoronediamine, 1,3'-bis(aminomethyl)cyclohexane, 3,3'-dimethyl-4,4'-diamino-dicyclohexylmethane, 4,4'-methylenebis (cyclohexylamine), 4,4'-diaminodiphenyl ether, 3,4'-diaminodiphenyl ether, 3,3-diaminodiphenyl ether, 4,4'-diamino-diphenylsulfone, 3,4'-diamino-diphenylsulfone, 3,3'-diamino-diphenylsulfone, 2,4'-diaminodiphenyl ether, 1,3-bis(4-aminophenoxy)benzene (m-TPE), 1,3-bis(3-aminophenoxy)benzene, 2,2-bis[4-(4-aminophenoxy)phenyl]propane, 2,2-bis[4-(4-aminophenoxy)phenyl]hexafluoropropane, bis[4-(4-aminophenoxy)phenyl]sulfone, bis[4-(3-aminophenoxy)phenyl]sulfone, 4,4'-bis(4-aminophenoxy)biphenyl, 1,4-bis(4-aminophenoxy) benzene, 4,4'-diaminodiphenylsulfide, 3,4'-diaminodiphenylsulfide, 3,3'-diaminodiphenylsulfide, 3,3'-diamino-4,4'-dihydroxydiphenylsulfone, 2,4-diaminotoluene, 2,5-diaminotoluene, 3,5-diaminobenzoic acid, 2,6-diaminopyridine, 4,4'-diamino-3,3'-dimethoxy-biphenyl, 4,4'-diamino-3,3'-dimethylbiphenyl, and 9,9'-bis(4-aminophenyl)fluorene.

5. The block copolymerization polyimide composition according to claim 1 or 2, wherein the ketone

is at least one selected from the group consisting of methyl ethyl ketone, methyl propyl ketone, methyl isopropyl ketone, methyl butyl ketone, methyl isobutyl ketone, methyl n-hexyl ketone, diethyl ketone, diisopropyl ketone, diisobutyl ketone, cyclopentanone, cyclohexanone, methylcyclohexanone, acetylacetone, diacetone alcohol, and cyclohexen-1-one.

6. The block copolymerization polyimide composition according to claim 1, wherein the ether is at least one selected from the group consisting of dipropyl ether, diisopropyl ether, dibutyl ether, tetrahydrofuran, tetrahydropyran, ethyl isoamyl ether, ethyl-t-butyl ether, ethyl benzyl ether, cresyl methyl ether, anisole, and phenetole.

7. The block copolymerization polyimide composition according to claim 1 or 2, wherein the ester is at least one selected from the group consisting of methyl acetate, ethyl acetate, propyl acetate, isopropyl acetate, butyl acetate, isobutyl acetate, amyl acetate, isoamyl acetate, 2-ethylhexyl acetate, cyclohexyl acetate, methylcyclohexyl acetate, benzyl acetate, methyl acetoacetate, ethyl acetoacetate, methyl propionate, ethyl propionate, butyl propionate, benzyl propionate, methyl butyrate, ethyl butyrate, isopropyl butyrate, butyl butyrate, isoamyl butyrate, methyl lactate, ethyl lactate, butyl lactate, ethyl isovalerate, isoamyl isovalerate, diethyl oxalate, dibutyl oxalate, methyl benzoate, ethyl benzoate, propyl benzoate, and methyl salicylate.

8. The block copolymerization polyimide composition according to claim 1 or 2, wherein the solvent containing a ketone, an ether or an ester contains at least one selected from the group consisting of N-methylpyrrolidone, N,N-dimethylformamide, N,N-dimethylacetamide, and dimethylsulfoxide.

9. The block copolymerization polyimide composition according to claim 2, wherein the lactone is γ -valerolactone, and the base is at least one of pyridine and N-methylmorpholine.

10. The block copolymerization polyimide composition according to claim 1 or 2, wherein the block copolymerization polyimide has a weight-average average molecular weight of 10,000 to 200,000 as calculated on a polystyrene basis.

11. A positive type photosensitive polyimide composition, which comprises a block copolymerization polyimide comprising a tetracarboxylic dianhydride and a diamine and soluble in at least one solvent of an ether, a ketone and an ester, and a photooxygenation compound.

12. A positive type photosensitive block copolymerization polyimide ink composition, which comprises a filler that is insoluble in a solvent.

13. A process of producing a block copolymerization polyimide composition, comprising steps of heating a tetracarboxylic dianhydride and a diamine in a solvent that contains at least one of a ketone, an ether

or an ester and in the presence of an acid catalyst generated from a lactone and a base to form a polyimide oligomer, and adding either one of a tetracarboxylic dianhydride or a diamine to said polyimide oligomer for
5 reaction therewith.

14. A process of producing a block copolymerization polyimide composition, comprising steps of heating a tetracarboxylic dianhydride and a diamine in a solvent selected from the group consisting of N-
10 methylpyrrolidone, N,N-dimethylformamide, N,N-dimethylacetamide and N,N-dimethylsulfoxide and in the presence of an acid catalyst generated from a lactone and a base to form a polyimide oligomer, then adding either one of a tetracarboxylic dianhydride or a diamine to said
15 polyimide oligomer for reaction therewith, then subjecting a reaction product to precipitation using a poor solvent, filtration and drying, and finally dissolving a resulting product in a solvent comprising at least one of a ketone, an ether and an ester.

20 15. The process of producing a block copolymerization polyimide composition according to claim 14, wherein the lactone is γ -valerolactone, and the base is at least one of pyridine and N-methylmorpholine.